EXECUTIVE SUMMARY

AIRCRAFT ACCIDENT INVESTIGATION BOARD

F-15C, T/N 80-0041 ACCIDENT
NELLIS AFB, NEVADA
24 OCTOBER 2011

On 24 October 2011 at 1602 local time, an F-15C aircraft, tail number (T/N) 80-0041, departed controlled flight during a single-ship Advanced Handling Characteristics (AHC) sortie on the Nevada Test and Training Range (NTTR). The mishap aircraft (MA) initiated a left-hand spin at 19,000 feet mean sea level (MSL) after the mishap pilot (MP) attempted a break turn followed by a level heading reversal. The MP attempted to regain control of the MA by following the Spin Recovery Display commands. After multiple revolutions and losing several thousand feet of altitude without any noticeable change in spin characteristics, the MP lowered the landing gear in an attempt to aid MA recovery. At an MP-estimated 8-9,000 feet MSL (terrain elevation is 4,200 feet), the MA recovered from its spin. The MA settled into a 50-70 degrees nose low attitude indicative of an attempt to regain flying airspeed. The MP selected afterburner on both engines attempting to initiate a dive recovery from the MA's low energy state. As aft control stick was applied and the MA neared the horizon, the MA nose sliced to the left. In this slice, the MP went from a controlled situation to an uncontrolled ejection situation that necessitated immediate ejection. The MA crashed into an uninhabited area of the NTTR owned by the Bureau of Land Management (BLM). The MP ejected without serious injury, the MA was destroyed, and no NTTR or BLM structures were damaged.

Given the limited evidence available, the AIB President was unable to determine a mishap cause by clear and convincing evidence. He did however find six contributing factors tied to four key segments of the mishap sequence. The contributing factors were links, which if broken, would have precluded aircraft loss. The first three of these six contributing factors aided the initial departure and included: aircraft structural imperfections (specifically the radome), inadequate focus on AHC topics (most notably effects of MA fuel weight and configuration on performance), and improper application of flight controls based on those characteristics. Next a misperception of operational conditions either contributed to the MP's inability to prevent the departure from progressing into a spin or from realizing aggressive MA maneuvering with its mishap sequence characteristics could flow directly to a spin with little warning. Additionally, an inability to attain/maintain full control authority during the lower-rate spin that ensued precluded MA spin recovery prior to required ejection altitudes. Likewise, the AHC maneuvers chosen (all performed at normal operating regimes) exposed the MP to non-optimal spin recovery altitudes despite any mission risk assessment that occurred. Ultimately, lowering landing gear aided spin recovery and increased control authority. It imposed other restrictions. Aft control stick, lower airspeed, lower altitude, higher dive angle and unusual gear down dive configuration created a situation where the aircraft did not have the energy or responsiveness to perform the requested maneuver. The MA's nose sliced to the left forcing immediate MP ejection. Since this nose-slice occurred below the uncontrolled ejection altitude, it was not deemed contributory to the mishap.